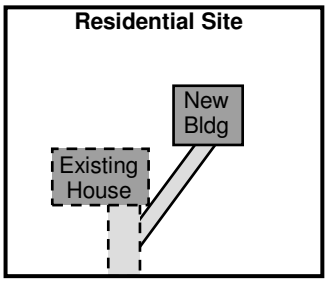
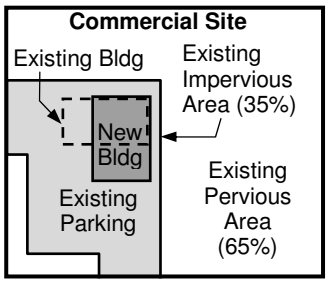
Redevelopment project means a project that proposes to add, replace, or modify impervious surfaces for purposes other than a residential subdivision or maintenance on a ***site*** that is already substantially developed in a manner consistent with its current zoning or with a legal non-conforming use, or has an existing impervious surface coverage of 35% or more. The following examples illustrate the application of this definition.

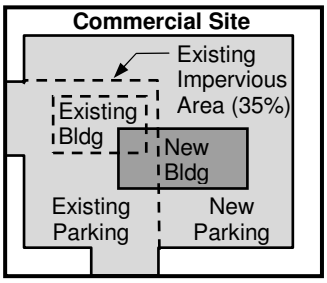
A Redevelopment Project that Adds New Impervious Surface



A Redevelopment Project that Replaces Impervious Surface



A Redev Project that Adds and Replaces Impervious Surface



Replaced impervious surface means any existing impervious surface on the ***project site*** that is proposed to be removed and re-established as impervious surface, excluding impervious surface removed for the sole purpose of installing utilities or performing maintenance. For the purposes of this definition, *removed* means the removal of buildings down to bare soil or the removal of Portland cement concrete (PCC) slabs and pavement or asphaltic concrete (AC) pavement together with any asphalt treated base (ATB). It does not include the removal of pavement material through grinding or other surface modification unless the entire layer of PCC or AC together with ATB is removed.

Replaced PGIS means ***replaced impervious surface*** that is ***pollution-generating impervious surface***.

Severe building flooding problem means there is flooding of the *finished floor area*[6] of a *habitable building*,[7] or the electrical/heating system of a habitable building for runoff events less than or equal to a 100-year event. Examples include flooding of finished floors of homes and commercial or industrial buildings, or flooding of electrical/heating system components in the crawl space or garage of a home.

Severe erosion problem means there is an open drainage feature with evidence of or potential for erosion/incision sufficient to pose a sedimentation hazard to downstream conveyance systems or pose a landslide hazard by undercutting adjacent slopes. Severe erosion problems do not include roadway shoulder rilling or minor ditch erosion.

Severe flooding problem means a ***severe building flooding problem*** or a ***severe roadway flooding problem***.

Severe roadway flooding problem means there is flooding over all lanes of a *roadway*,[8] or a *sole access driveway*[9] is severely impacted, for runoff events less than or equal to the 100-year event. A severely impacted sole access driveway is one in which flooding overtops a culverted section of the driveway, posing a threat of washout or unsafe access conditions due to indiscernible driveway edges, or flooding is deeper than 6 inches on the driveway, posing a severe impediment to emergency access.

Single family residential project means any project that (a) constructs or modifies a single family dwelling unit, (b) makes improvements (e.g., driveways, roads, outbuildings, play courts, etc.) or clears native vegetation on a lot that contains or will contain a single family dwelling unit, or (c) is a plat, short plat, or boundary line adjustment that creates or adjusts lots that will contain single family dwelling units.

---

[6] *Finished floor area*, for the purposes of defining ***severe building flooding problem***, means any enclosed area of a building that is designed to be served by the building's permanent heating or cooling system.

[7] *Habitable building* means any residential, commercial, or industrial building that is equipped with a permanent heating or cooling system and an electrical system.

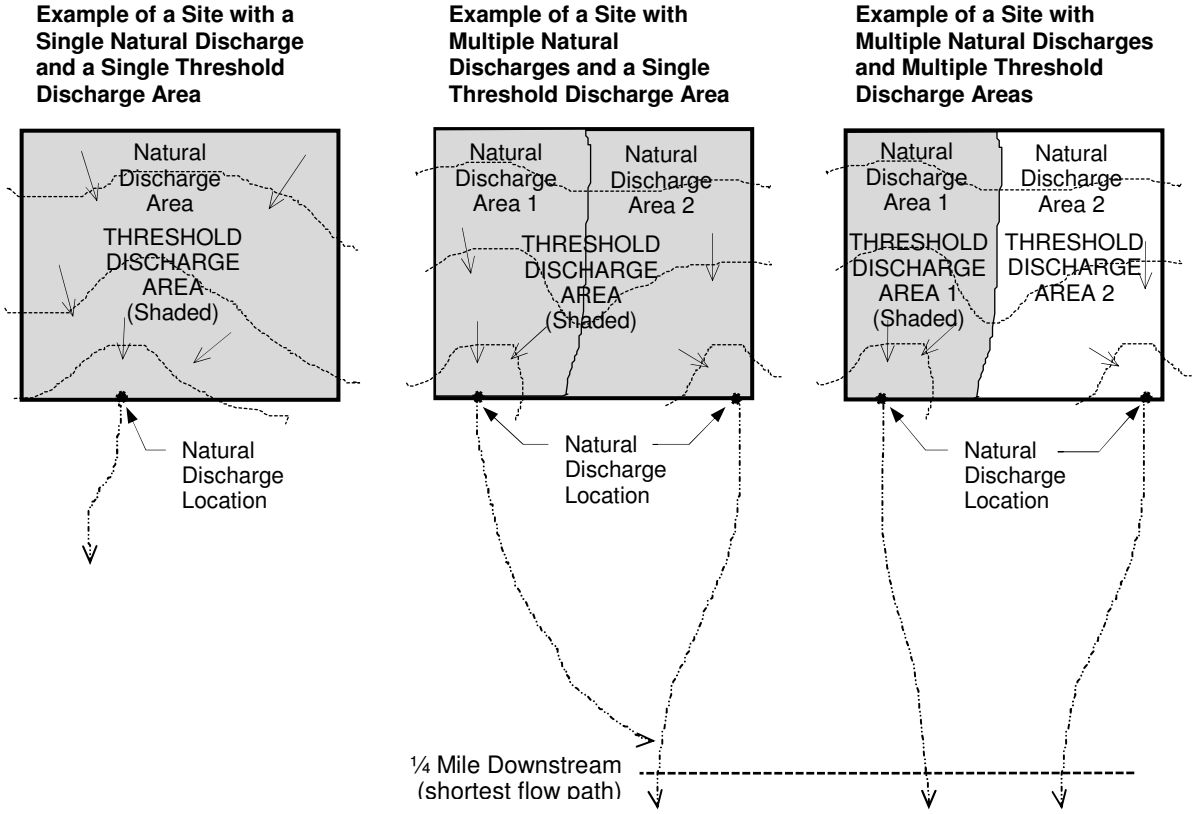
[8] *Roadway*, for the purposes of this definition, means the traveled portion of any public or private road or street classified as such in the *King County Road Standards*.

[9] *Sole access driveway* means there is no other unobstructed, flood-free route for emergency access to a habitable building.

Site (a.k.a. ***development site***) means a single parcel, or two or more contiguous parcels that are under common ownership or documented legal control, used as a single parcel for purposes of applying for authority from King County to carry out a development/project proposal. For projects located primarily within dedicated rights-of-way, ***site*** includes the entire width of right-of-way within the total length of right-of-way subject to improvements proposed by the project.

Steep slope hazard area is the critical area designation, defined and regulated in KCC 21A, that is applied to areas on a slope of 40% or more within a vertical elevation change of at least 10 feet. See the "Definitions" section for more details.

Threshold discharge area means an onsite area draining to a single ***natural discharge location***, or multiple ***natural discharge locations*** that combine within one-quarter-mile downstream (as determined by the shortest flowpath). The examples below illustrate this definition. This term is used to clarify how the thresholds, exemptions, and exceptions of this manual are applied to ***sites*** with multiple discharge locations.



Transportation redevelopment project means a project that proposes to add, replace, or modify impervious surface, for purposes other than maintenance, within a length of dedicated public or private road right-of-way that has an existing impervious surface coverage of thirty-five percent or more.

FIGURE 1.1.2.A FLOW CHART FOR DETERMINING TYPE OF DRAINAGE REVIEW REQUIRED

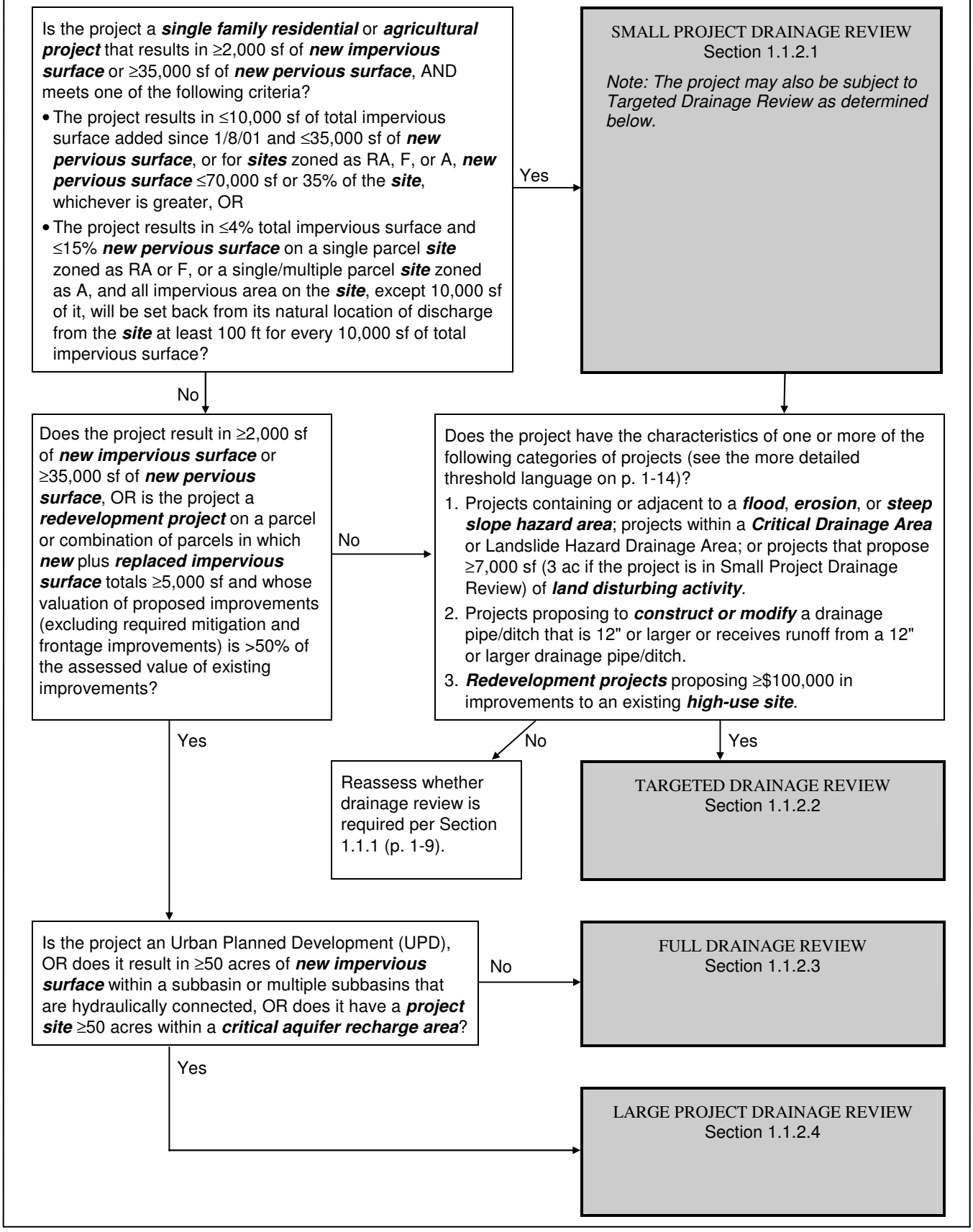


TABLE 1.1.2.A REQUIREMENTS APPLIED UNDER EACH DRAINAGE REVIEW TYPE

	Small Project Drainage Review	Targeted Drainage Review			Full Drainage Review	Large Project Drainage Review
	Single family residential projects and ***agricultural projects*** that result in ≥2,000 sf of ***new impervious surface*** or ≥35,000 sf of ***new pervious surface*** but do not exceed the total impervious surface and ***new pervious surface*** thresholds specified in Section 1.1.2.1 (p. 1-13).	Projects that are not subject to Full or Large Project Drainage Review, AND have characteristics of **one or more** of the following categories of projects: 1. Projects containing or adjacent to a ***flood***, ***erosion***, or ***steep slope hazard area***; projects within a ***Critical Drainage Area*** or Landslide Hazard Drainage Area; or projects proposing ≥7,000 sf of ***land disturbing activity*** (3 ac if in Small Project Drainage Review). 2. Projects that ***construct or modify*** a drainage pipe/ditch that is 12" or larger or receive runoff from a 12" or larger drainage pipe/ditch. 3. ***Redevelopment projects*** with ≥$100,000 in improvements to a ***high-use site***(1)			All projects that result in ≥2,000 sf of ***new impervious*** or ≥35,000 sf of ***new pervious surface***, but are not subject to Small Project Drainage Review, OR ***redevelopment projects*** meeting drainage review threshold #7 in Section 1.1.1 (p. 1-9).	UPDs, OR projects that result in ≥50 acres of ***new impervious*** within a subbasin or multiple subbasins that are hydraulically connected, OR ***project sites*** ≥50 acres within a ***critical aquifer recharge area***.
		Category 1	**Category 2**	**Category 3**		
SMALL PROJECT DRAINAGE REQUIREMENTS	✓					
CORE REQUIREMENT #1 Discharge at Natural Location		*(2)	✓		✓	✓
CORE REQUIREMENT #2 Offsite Analysis		*(2)	✓(3)		✓(3)	✓(3)
CORE REQUIREMENT #3 Flow Control		*(2)			✓(3)	✓(3)
CORE REQUIREMENT #4 Conveyance System		*(2)	✓		✓	✓
CORE REQUIREMENT #5 Erosion & Sediment Control		✓	✓	✓	✓	✓
CORE REQUIREMENT #6 Maintenance & Operations		*(2)	✓	✓	✓	✓
CORE REQUIREMENT #7 Financial Guarantees & Liability		*(2)	✓(3)	✓(3)	✓(3)	✓(3)
CORE REQUIREMENT #8 Water Quality		*(2)			✓(3)	✓(3)
SPECIAL REQUIREMENT #1 Other Adopted Requirements		✓(3)			✓(3)	✓(3)
SPECIAL REQUIREMENT #2 Flood Hazard Area Delineation		✓(3)			✓(3)	✓(3)
SPECIAL REQUIREMENT #3 Flood Protection Facilities		✓(3)			✓(3)	✓(3)
SPECIAL REQUIREMENT #4 Source Control		✓(3)	✓(3)	✓(3)	✓(3)	✓(3)
SPECIAL REQUIREMENT #5 Oil Control				✓(3)	✓(3)	✓(3)

(1) Category 3 projects installing oil controls that construct or modify a 12-inch pipe/ditch are also Category 2 projects.

(2) May be applied by DDES based on project or ***site***-specific conditions.

(3) These requirements have exemptions or thresholds that may preclude or limit their application to a specific project.

1.1.2.1 SMALL PROJECT DRAINAGE REVIEW

Small Project Drainage Review is a simplified drainage review for small residential building, clearing, and subdivision projects or small ***agricultural project*s** that result in either (a) 10,000 square feet or less of impervious surface added on or after January 8, 2001 (the effective date of the ESA 4(d) Rule for Puget Sound Chinook salmon) or (b) less than 4% of total impervious surface as specified in this section. The core and special requirements applied under Full Drainage Review are replaced with simplified small project drainage requirements that can be applied by a non-engineer. These requirements include simple stormwater dispersion, infiltration, and ***site*** design techniques called flow control Best Management Practices (BMPs), which provide the necessary mitigation of flow and water quality impacts for small projects. Also included are simple measures for erosion and sediment control (ESC). This simplified form of drainage review acknowledges that drainage impacts for many small project proposals can be effectively mitigated without construction of costly flow control and water quality facilities.

The Small Project Drainage Review process minimizes the time and effort required to design, submit, review, and approve drainage facilities for these proposals. In most cases, the requirements can be met with submittals prepared by contractors, architects, or homeowners without the involvement of a ***civil engineer***.

Note: some projects subject to Small Project Drainage Review may also require Targeted Drainage Review if they meet any of the threshold criteria in Section 1.1.2.2 (p. 1-14).

Threshold

THRESHOLD

Small Project Drainage Review is required for any ***single family residential project*** or ***agricultural project*** that will result in 2,000 square feet[13] or more of ***new impervious surface*** or 35,000 square feet or more of ***new pervious surface***, AND that meets one of the following criteria:

- The project will result in no more than 10,000 square feet[13] of **total impervious surface** added on or after January 8, 2001 and no more than 35,000 square feet[13] of ***new pervious surface*** (for ***sites*** zoned as RA, F, or A, this ***new pervious surface*** threshold may be increased to 70,000 square feet[13] or 35% of the ***site***, whichever is greater), OR
- The project will result in no more than 4% **total impervious surface** and 15% ***new pervious surface*** on a single parcel ***site*** zoned as RA or F, or on a single or multiple parcel ***site*** zoned as A, AND all impervious surface area, except 10,000 square feet of it, will be set back from its natural location of discharge from the ***site*** at least 100 feet for every 10,000 square feet of **total impervious area**.

*Note: for the purposes applying this threshold to a proposed single family residential subdivision (i.e., plat or short plat project), the impervious surface coverage assumed on each created lot shall be 4,000 square feet (8,000 square feet if the **site** is zoned as RA) or the maximum allowed by KCC 21A.12.030, whichever is less. A lower impervious surface coverage may be assumed for any lot in which the lower impervious surface coverage is set as the maximum through a declaration of covenant recorded for the lot. Also, the **new pervious surface** assumed on each created lot shall be the entire lot area, except the assumed impervious portion and any portion in which native conditions are preserved by a clearing limit per KCC 16.82, a covenant or easement recorded for the lot, or a tract dedicated by the proposed subdivision.*

Scope of Requirements

REQMTS

IF Small Project Drainage Review is required, THEN the proposed project must comply with the simplified small project submittal and drainage design requirements detailed in *Small Project Drainage Requirements* adopted as Appendix C to this manual and available as a separate booklet from DNRP or DDES. These requirements include simplified BMPs/measures for flow control and erosion and sediment control.

[13] The thresholds of 2,000, 10,000, 35,000, and 70,000 square feet of impervious or pervious surface shall be applied by ***threshold discharge area*** and in accordance with the definitions of these surfaces in Section 1.1. *Note: the calculation of total impervious surface added on after January 8, 2001 may exclude any such added impervious surface that is confirmed by DDES engineering staff to be already mitigated by a County approved and inspected flow control facility or BMP.*

Presumption of Compliance with Core and Special Requirements

The simplified drainage requirements applied under Small Project Drainage Review are considered sufficient to meet the overall intent of the core and special requirements in Sections 1.2 and 1.3, except under certain conditions when a proposed project has characteristics that trigger Targeted Drainage Review (see the threshold for Targeted Drainage Review in Section 1.1.2.2, p. 1-14) and may require the involvement of a ***civil engineer***. Therefore, any proposed project that is subject to Small Project Drainage Review as determined above and complies with the small project drainage requirements detailed in Appendix C is presumed to comply with all the core and special requirements in Sections 1.2 and 1.3 **except** those requirements that would apply to the project if it is subject to Targeted Drainage Review as specified in Section 1.1.2.2 (p. 1-14).

1.1.2.2 TARGETED DRAINAGE REVIEW

Targeted Drainage Review (TDR) is an abbreviated evaluation by DDES permit review staff of a proposed project's compliance with selected core and special requirements. Projects subject to this type of drainage review are typically Small Project Drainage Review proposals or other small projects that have ***site***-specific or project-specific drainage concerns that must be addressed by a ***civil engineer*** or DDES engineering review staff. Under Targeted Drainage Review, engineering costs associated with drainage design and review are kept to a minimum because the review includes only those requirements that would apply to the particular project.

Threshold

THRESHOLD

Targeted Drainage Review is required for any proposed project that is subject to drainage review as determined in Section 1.1.1 (p. 1-9) but is not subject to Full or Large Project Drainage Review as determined in Sections 1.1.2.3 (p. 1-16) and 1.1.2.4 (p. 1-17), AND that has the characteristics of one or more of the following project categories:

- **TDR Project Category #1:** Projects that contain or are adjacent to a ***flood hazard area***, ***erosion hazard area***, or ***steep slope hazard area*** as defined in KCC 21A.06; OR projects located within a ***Critical Drainage Area*** or ***Landslide Hazard Drainage Area***; OR projects that propose 7,000 square feet (3 acres if in Small Project Drainage Review) or more of ***land disturbing activity***. *Note: at the discretion of DDES, this category may also include any project in Small Project Drainage Review that has a design or* ***site****-specific issue that must be addressed by a* ***civil engineer****.*
- **TDR Project Category #2:** Projects that propose to ***construct or modify*** a drainage pipe/ditch that is 12 inches or more in size/depth or receives surface and storm water runoff from a drainage pipe/ditch that is 12 inches or more in size/depth.
- **TDR Project Category #3:** ***Redevelopment projects*** that propose $100,000 or more of improvements to an existing ***high-use site***.

Scope of Requirements

REQMTS

IF Targeted Drainage Review is required, THEN the applicant must demonstrate that the proposed project complies with the selected core and special requirements corresponding to the project category or categories that best match the proposed project. The project categories and applicable requirements for each are described below and summarized in Table 1.1.2.A (p. 1-12).

Note: If the proposed project has the characteristics of more than one project category, the requirements of each applicable category shall apply.

Compliance with these requirements requires the submittal of engineering plans and calculations stamped by a ***civil engineer***, unless deemed unnecessary by DDES. The engineer need only demonstrate compliance with those core and special requirements that have been predetermined to be applicable based on specific project characteristics as detailed below and summarized in Table 1.1.2.A (p. 1-12). The

TABLE 1.2.3.A
SUMMARY OF FLOW CONTROL PERFORMANCE CRITERIA ACCEPTABLE FOR IMPACT MITIGATION[1]

IDENTIFIED PROBLEM DOWNSTREAM	AREA-SPECIFIC FLOW CONTROL FACILITY REQUIREMENT		
	Basic Flow Control (FC) Areas	**Conservation FC Areas**	**Flood Problem FC Areas**
No Problem Identified Apply the minimum area-specific flow control performance criteria.	Apply the Level 1 flow control standard, which matches ***existing site conditions*** 2- and 10-year peaks	Apply the ***historic site conditions*** Level 2 flow control standard, which matches historic durations for 50% of 2-yr through 50-year peaks AND matches historic 2- and 10-year peaks	Apply the ***existing*** or ***historic site conditions*** Level 2 flow control standard (whichever is appropriate based on downstream flow control area) AND match ***existing site conditions*** 100-year peaks
Type 1 Drainage Problem ***Conveyance System Nuisance Problem***	Additional Flow Control Hold 10-year peak to overflow T_r peak[2][3]	*No additional flow control or other mitigation is needed*	*No additional flow control or other mitigation is needed*
Type 2 Drainage Problem ***Severe Erosion Problem***	Additional Flow Control Apply the ***existing site conditions*** Level 2 flow control standard[3][4]	*No additional flow control is needed, but other mitigation may be required*[4]	*No additional flow control is needed, but other mitigation may be required*[4]
Type 3 Drainage Problem ***Severe Flooding Problem***	Additional Flow Control Apply the ***existing site conditions*** Level 3 flow control standard to peak flows above the overflow T_r peak. If flooding is from a closed depression, make design adjustments as needed to meet the "special provision for closed depressions"[3][5]	Additional Flow Control Apply the ***historic site conditions*** Level 3 flow control standard. If flooding is from a closed depression, make design adjustments as needed to meet the "special provision for closed depressions"[3][5]	Additional Flow Control If flooding is from a closed depression, make design adjustments as needed to meet the "special provision for closed depressions" [3][5]
Potential Impact to Wetland Hydrology as Determined through a Critical Area Review per KCC 21A.24.100	Additional Flow Control DDES may require design adjustments per the wetland hydrology protection guidelines in Reference Section 5	Additional Flow Control DDES may require design adjustments per the wetland hydrology protection guidelines in Reference Section 5	Additional Flow Control DDES may require design adjustments per the wetland hydrology protection guide-lines in Reference Section 5

Notes:

(1) More than one set of problem-specific performance criteria may apply if two or more downstream problems are identified through offsite analysis per Core Requirement #2. If this happens, the performance goals of each applicable problem-specific criteria must be met. This can require extensive, time-consuming analysis to implement multiple sets of outflow performance criteria if additional onsite flow control is the only viable option for mitigating impacts to these problems. In these cases, it may be easier and more prudent to implement the ***historic site conditions*** Level 3 flow control standard in place of the otherwise required area-specific standard. Use of the historic Level 3 flow control standard satisfies the specified performance criteria for all the area-specific and problem-specific requirements except if adjustments are required per the special provision for closed depressions described below in Note 5.

(2) Overflow T_r is the return period of conveyance system overflow. To determine T_r requires a minimum Level 2 downstream analysis as detailed in Section 2.3.1.1. To avoid this analysis, a T_r of 2 years may be assumed.

(3) Offsite improvements may be implemented in lieu of or in combination with additional flow control as allowed in Section 1.2.2.2 (p. 1-24) and detailed in Section 3.3.5.

(4) A tightline system may be required regardless of the flow control standard being applied if needed to meet the discharge requirements of Core Requirement #1 (p. 1-19) or the outfall requirements of Core Requirement #4 (p. 1-48), or if deemed necessary by DDES where the risk of severe damage is high.

(5) **Special Provision for Closed Depressions with a Severe Flooding Problem:**
IF the proposed project discharges by overland flow or conveyance system to a closed depression experiencing a ***severe flooding problem*** AND the amount of ***new impervious surface*** area proposed by the project is greater than or equal to 10% of the 100-year water surface area of the closed depression, THEN use the "point of compliance analysis technique" described in Section 3.3.6 to verify that water surface levels are not increasing for the return frequencies at which flooding occurs, up to and including the 100-year frequency. If necessary, iteratively adjust onsite flow control performance to prevent increases. *Note: The point of compliance analysis relies on certain field measurements taken directly at the closed depression (e.g., soils tests, topography, etc.). If permission to enter private property for such measurements is denied, DDES may waive this provision and apply the* ***existing site conditions*** *Level 3 flow control standard with a mandatory 20% safety factor on the storage volume.*

❑ DIRECT DISCHARGE EXEMPTION

Any onsite **natural drainage area** is exempt from the flow control facility requirement if the area drains to one of the ***major receiving waters*** listed in Table 1.2.3.B at right, AND meets the following criteria for *direct discharge*[23] to that receiving water:

a) The **flowpath** from the ***project site*** discharge point to the edge of the 100-year floodplain of the major receiving water will be **no longer than a quarter mile**, except for discharges to Lake Sammamish, Lake Washington, and Puget Sound, AND

b) The conveyance system between the ***project site*** and the ***major receiving water*** will extend to the ordinary high water mark, and will be **comprised of manmade conveyance elements** (pipes, ditches, etc.) and will be within public right-of-way or a public or private drainage easement, AND

c) The conveyance system will have **adequate capacity**[24] per Core Requirement #4, Conveyance System, for the entire contributing drainage area, assuming **build-out conditions** to current zoning for the *equivalent area* portion (defined in Figure 1.2.3.A, below) and existing conditions for the remaining area, AND

d) The conveyance system will be adequately **stabilized to prevent erosion**, assuming the same basin conditions as assumed in Criteria (c) above, AND

e) The direct discharge proposal will not **divert flows** from or increase flows to an **existing wetland or stream** sufficient to cause a significant adverse impact.

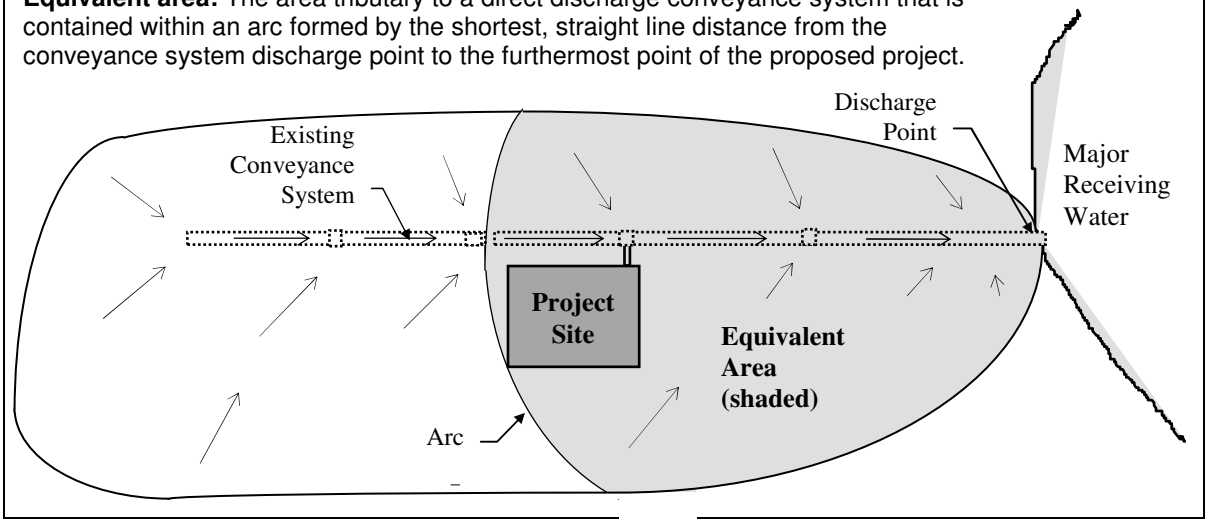
TABLE 1.2.3.B
MAJOR RECEIVING WATERS

- Cedar River
- Green/Duwamish River below River Mile 6 (S. Boeing Access Road) and above SR 18
- Snoqualmie River (includes the North, South, and Middle Forks)
- Sammamish River*
- White/Stuck River
- South Fork Skykomish River
- Tolt River
- Lake Sammamish
- Lake Washington
- Puget Sound

*Note: The **major receiving waters** listed above do not include side adjacent or associated channels, spring- or groundwater-fed streams, or wetlands.*

FIGURE 1.2.3.A EQUIVALENT AREA DEFINITION AND ILLUSTRATION

Equivalent area: The area tributary to a direct discharge conveyance system that is contained within an arc formed by the shortest, straight line distance from the conveyance system discharge point to the furthermost point of the proposed project.



* *Projects discharging directly to the Sammamish River must infiltrate runoff to the extent feasible before discharge to the River.*

[23] *Direct discharge* means undetained discharge from a proposed project to a ***major receiving water***.

[24] *Note: If the conveyance system is an existing King County-owned system, the County may charge a special use fee.*

❑ IMPERVIOUS SURFACE PERCENTAGE EXEMPTION

Any onsite ***threshold discharge area*** is exempt from the flow control facility requirement if it meets all of the following conditions:

a) The amount of ***new impervious surface*** **plus existing impervious surface** that is **not** ***fully dispersed*** per the criteria on Page 1-40 must be no more than 4% of the ***threshold discharge area***, AND

b) The amount of ***new pervious surface*** must be no more than 15% of the natural drainage area, AND

c) Flow control BMPs must be applied to ***new impervious surface***s as specified in Section 1.2.3.3 (p. 1-44), AND

d) All impervious surface area, except 10,000 square feet of it, must be **set back** from its natural location of discharge from the ***site*** at least 100 feet for every 10,000 square feet of total impervious surface, AND

e) Increased runoff that is not ***fully dispersed*** from the ***new impervious surface*** and ***new pervious surface*** must not significantly impact a **critical area**, ***severe flooding problem***, or ***severe erosion problem***, AND

f) The **manner in which runoff is discharged** from the ***project site*** does not create a significant adverse impact per Core Requirement #1.

A. BASIC FLOW CONTROL AREAS

Basic Flow Control Areas are designated by King County where the County has determined that maintaining peak flows is sufficient to protect natural and constructed conveyance systems. This designation is usually based on the findings of a plan or study that has determined that such conveyance systems are not sensitive to development-induced increases in runoff volume and durations. Basic Flow Control Areas are delineated on the Flow Control Applications Map adopted with this manual (see map pocket on inside of back cover). A more detailed delineation is available on the County's Geographic Information System.

Note: For projects located at or near the delineated boundary of the Basic Flow Control Area, ***site****-specific topography or drainage information may be needed to determine whether a project or any* ***threshold discharge area*** *of a project is indeed within the flow control area. Any* ***threshold discharge area*** *is considered to be within the Basic Flow Control Area if the* ***threshold discharge area*** *drains to a waterbody or drainage system that is clearly within the mapped Basic Flow Control Area.*

REQMT

Within Basic Flow Control Areas, required flow control facilities must comply with the following minimum requirements for facility performance and mitigation of targeted surfaces, except where such requirements or the facility requirement itself is waived or reduced by the area-specific exceptions at the end of this subsection.

Minimum Required Performance

Facilities **in Basic Flow Control Areas** must comply with the following flow control performance standards and assumptions unless modified by offsite analysis per Core Requirement #2 (see Table 1.2.3.A, p. 1-29):

Level 1 Flow Control: Match the developed peak discharge rates to ***existing site conditions*** peak discharge rates for 2- and 10-year return periods.

Reduced Level 1 Flow Control: A modified version of this standard, controlling only the 10-year frequency peak flow rate, is allowed if the applicant demonstrates both of the following:

- The proposed ***project site*** discharges to a conveyance system not subject to erosion that extends from the project discharge point to one of the ***major receiving waters*** listed on Page 1-30, AND

- There is no evidence of capacity problems along this conveyance system as determined by offsite analysis per Core Requirement #2, or such problems will be resolved prior to project construction.

Intent

The Level 1 flow control standard is intended to protect flow-carrying capacity and limit increased erosion within the downstream conveyance system for runoff events less than or equal to the 10-year event. Matching the 2- and 10-year peak flows is intended to prevent increases in return-frequency peak flows less than or equal to the 10-year peak flow down to the 2-year peak flow. This level of control is also intended to prevent creation of new ***conveyance system nuisance problems*** as described in Section1.2.2.1.

Effectiveness in Addressing Downstream Drainage Problems

While the Level 1 flow control standard provides reasonable protection from many development-induced conveyance problems (up to the 10-year event), it does not prevent increases in runoff volumes or flow durations that tend to aggravate the three types of downstream problems described in Section 1.2.2.1. Consequently, if one or more of these problems are identified through offsite analysis per Core Requirement #2, additional onsite flow control and/or offsite improvements will likely be required (see "Problem-Specific Mitigation Requirements" in Section 1.2.2.2, p. 1-25).

Target Surfaces

Facilities **in Basic Flow Control Areas** must mitigate (either directly or in effect) the runoff from the following target surfaces within the ***threshold discharge area*** for which the facility is required:

1. ***New impervious surface*** that is **not** ***fully dispersed*** per the criteria on Page 1-40. For individual lots within residential subdivision projects, the extent of ***new impervious surface*** shall be assumed as specified in Chapter 3. *Note, any* ***new impervious surface*** *such as a bridge that spans the ordinary high water of a stream, pond, or lake may be excluded as a target surface if the runoff from such span is conveyed to the ordinary high water area in accordance with Criteria (b), (c), (d), and (e) of the "Direct Discharge Exemption" (p 1-30).*
2. ***New pervious surface*** that is **not** ***fully dispersed***. For individual lots within residential subdivision projects, the extent of ***new pervious surface*** shall be assumed to be the entire lot area, except the assumed impervious portion and any portion in which native conditions are preserved by covenant, tract, or easement. In addition, the ***new pervious surface*** on individual lots shall be assumed to be 100% grass if located within the Urban Growth Area (UGA) and 50% grass/50% pasture if located outside the UGA.

Exceptions

The following exceptions apply only **in Basic Flow Control Areas**:

1. The facility requirement in Basic Flow Control Areas is waived for any ***threshold discharge area*** in which the target surfaces subject to this requirement will generate no more than a **0.1-cfs increase** in the ***existing site conditions*** 100-year peak flow. *Note: for the purposes of this calculation, target surfaces served by flow control BMPs per Appendix C may be modeled in accordance with the flow control BMP facility sizing credits in Table 1.2.3.C (p. 1-41).*
2. The facility requirement in Basic Flow Control Areas may be waived for any ***threshold discharge area*** of a ***redevelopment project*** in which all of the following criteria are met:
   a) The target surfaces subject to the Basic Flow Control Areas facility requirement will generate no more than a **0.4-cfs increase** in the ***existing site conditions*** 100-year peak flow for the ***threshold discharge area***, AND
   b) The target surfaces subject to the Basic Flow Control Areas facility requirement will generate no more than a **0.1-cfs increase** in the ***existing site conditions*** 100-year peak flow at any ***natural discharge location*** from the ***project site*** (*note: for the purposes of this calculation, target surfaces*

that are necessary during construction, unless required by the County inspector. *Note that the ESC plan is a component of, or may comprise, the Construction Stormwater Pollution Prevention Plan, which in turn is a primary component of the engineering plans required for drainage review as specified in Chapter 2.*

B. WET SEASON CONSTRUCTION

During the wet season (October 1 to April 30) any ***site*** with exposed soils shall be subject to the "Wet Season Requirements" contained in the *ESC Standards*. In addition to the ESC cover measures, these provisions include covering any newly-seeded areas with mulch and seeding as much disturbed area as possible during the first week of October to provide grass cover for the wet season. Other ESC measures such as baker tanks and portable sand filters may be required for use during the wet season.

C. CONSTRUCTION WITHIN CRITICAL AREAS AND BUFFERS

Any construction that will result in disturbed areas on or within a stream or associated buffer, within a wetland or associated buffer, or within 50 feet of a lake shall be subject to the "Critical Area Restrictions" contained in the *ESC Standards*. These provisions include phasing the project whenever possible so that construction in these areas is limited to the dry season.

D. MAINTENANCE

All ESC measures shall be maintained and reviewed on a regular basis as prescribed in the *ESC Standards*. For projects in Full or Large Project Drainage Review, the **applicant must designate an ESC supervisor** who shall be responsible for the performance, maintenance, and review of ESC measures and for compliance with all permit conditions relating to ESC as described in the *ESC Standards*. The ESC supervisor must be a **Certified Professional in Erosion and Sediment Control** (see www.cpesc.net for more information) or a **Certified Erosion and Sediment Control Lead** whose certification is recognized by King County. King County recognition of certification means that the individual has taken a King County-approved third party training program and has passed the King County-approved test for that training program. Additionally, the applicant's selection of an ESC supervisor must be approved by King County.

E. FINAL STABILIZATION

Prior to obtaining final construction approval, the ***site*** shall be stabilized, structural ESC measures (such as silt fences and sediment traps) shall be removed, and drainage facilities shall be cleaned as specified in the *ESC Standards*.

F. CONSIDERATION OF OTHER REQUIRED PERMITS

Consideration should be given to the requirements and conditions that may be applied by other agencies as part of other permits required for land-disturbing activities. In particular, the following permits may be required and should be considered when implementing ESC measures:

- A **Class IV Special Forest Practices Permit** is required by the Washington State Department of Natural Resources for projects that will clear more than two acres of forest or 5,000 board feet of timber. All such clearing is also subject to the State Environmental Policy Act (RCW 43.21C) and will require SEPA review. King County assumes lead agency status for Class IV permits, and the application may be consolidated with the associated King County development permit or approval.
- A **NPDES General Permit for Construction** (pursuant to the Washington State Department of Ecology's Baseline General Permit for Stormwater) is required for projects that will disturb more than one acre for purposes of constructing or allowing for construction a development.

1.2.6 CORE REQUIREMENT #6: MAINTENANCE AND OPERATIONS

REQMT

Maintenance and operation of all drainage facilities is the responsibility of the applicant or property owner, except those facilities for which King County assumes maintenance and operation as described below and in KCC 9.04.115 and KCC 9.04.120. Drainage facilities must be maintained and operated in accordance with the maintenance standards in Appendix A of this manual or other maintenance standards as approved by King County.

Intent: To ensure that the maintenance responsibility for drainage facilities is clearly assigned and that these facilities will be properly maintained and operated in perpetuity.

Drainage Facilities to be Maintained by King County

King County will assume maintenance and operation of the following drainage facilities[39] for any residential subdivision with two or more lots, and any similar development where at least two-thirds of the developed contributing area is from single family or townhouse residential structures on individual lots, except where King County grants an adjustment per Section 1.4, allowing the facilities to be maintained by the homeowners association:

- Flow control and water quality facilities within a tract or right-of-way dedicated to King County.
- Flow control BMP devices within a tract or right-of-way dedicated to King County.
- The conveyance system within improved public road right-of-way.

Note: King County may assume maintenance of facilities serving any mix of developments as part of a shared facilities plan. See Reference Section 4-D for further guidance regarding the County's assumption of maintenance responsibility for shared facilities.

King County **will assume maintenance** and operation of these facilities **two years after final construction approval** by DDES and an inspection by the County to ensure the facilities have been properly maintained and are operating as designed.

Flow control and water quality facilities and **flow control BMP devices** to be maintained and operated by King County must be located in a tract or right-of-way dedicated to King County. Access roads serving these facilities must also be located in the tract or right-of-way and must be connected to an improved public road right-of-way. Underground flow control or water quality facilities (tanks or vaults) may be allowed in private rights-of-way or roads if the easement includes provisions for facility access and maintenance.

Conveyance systems to be maintained and operated by King County must be located in a drainage easement, tract, or right-of-way granted to King County. *Note: King County does not normally assume maintenance responsibility for conveyance systems that are outside of improved public road right-of-way.*

Drainage Facilities to be Maintained by Private Parties

All drainage facilities maintained privately or by other public agencies, except flow control BMPs, must be maintained as specified in **Appendix A**, "Maintenance Requirements for Flow Control, Conveyance, and WQ Facilities," and as further prescribed in **Chapter 6** for water quality facilities, unless otherwise approved by King County DNRP. A copy of the **Operation and Maintenance Manual** submitted as part of the permit application (see Section 2.3.1) shall be retained on ***site*** and shall be transferred with the property to the new owner. A log of maintenance activity indicating when cleaning occurred and where waste was disposed of shall also be kept by the owner and be available for inspection by the County.

All privately maintained **flow control BMPs** must be maintained as specified in the ***site*/lot's** declaration of covenant and grant of easement per Section 5.2.1.

[39] *Note: King County does not assume maintenance of individual lot drainage systems or drainage stub-outs serving single family residential lot downspout, footing, or yard drains, nor does King County assume maintenance of the vegetated portions of water quality treatment facilities and flow control BMPs integrated into site landscaping.*